EMPLOYE'S HANDBOOK

OF

GENERAL INFORMATION

AND

SAFETY RULES

KANKAKEE ORDNANCE WORKS

JOLIET, ILLINOIS

TETRYL DEPARTMENT

REVISED 11-42

EMERGENCY ACTION
FIRE DEPARTMENT CALLS

BY FIRE ALARM

Go to the nearest alarm box, pull the hookguard down, pull the hook all the way down and let go. Be sure to stay at the box to direct the firemen to the location of the fire.

Learn the location of alarm boxes and emergency equipment in your area in advance—this will speed your action if the need ever arises.

BY TELEPHONE

DIAL 2222

Give your message clearly—be sure it is understood.

AMBULANCE CALL

DIAL 2223

PATROL HEADQUARTERS

Dial 4200

SAFETY OFFICE

Dial 3213 or 4165

Date.....

Personnel Division

E. I. du Pont de Nemours & Co., Inc.
Kankakee Ordnance Works

I hereby acknowledge receipt of the "EMPLOYE'S HANDBOOK OF GENERAL INFORMATION AND SAFETY RULES" and certify that I have read and understand the Safety Rules set forth therein. I will obey all Safety Rules and immediately report any Safety or Fire Hazards which I may encounter to my foreman.

Signed.....

Clock No..... Dept.....

This certificate must be returned to the Personnel Division within five days and will become a permanent part of your employment records.

NOTE: Please return this signed to your foreman who will send it to the Personnel Division for filing with your employment records.

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HANDBOOK OF INFORMATION AND RULES FOR EMPLOYES

I. INTRODUCTION

The purpose of this booklet is two-fold: First, to state briefly certain useful information which every new employe will want to know and which every old employe will want to keep in mind; and second, to outline the various procedures and rules of accident prevention and to serve as a manual of safe practices.

Please read this booklet carefully and then keep it for future reference.

It will inform you in regard to the Works rules and regulations, Company policies and the benefits to be derived from the various Industrial Relations Plans.

It will help you in regard to your health, safety, and well being; and it is hoped that through a better understanding, it will contribute to that close and friendly relation which has always existed between the Company and its employes.

Use it as a guide; and if at any time you are in doubt, consult your foreman. He is sincerely interested in your welfare.

II. WORKING CONDITIONS

Special attention will be paid to working conditions. The advantages of a safe, comfortable and well-lighted working place are recognized; and every reasonable effort will be made to provide these conditions.

Every effort is made to prevent accidents by fostering a thorough safety program, which includes systematic inspections, proper instructions regarding safe practices and the providing of adequate pro-

tection and equipment for the elimination of injuries and fire.

A regular Medical Division and a Hospital are maintained to safeguard the health and well-being of employes. In addition to the regular examination given at the time of hiring, periodic examinations are given at least once annually thereafter. These examinations are of much value in helping to determine the kind of work for which the employe is best fitted, preserving his general health and detecting those conditions which can be corrected by early treatment and which would be serious if neglected.

This Works is a major part of the program for National Defense, and its continuous operation is imperative. Every means should be used to insure regular operation and to safeguard the personnel and the Works property. The Patrol Division has been expressly formed to aid in this task. The Patrolmen will require a high degree of cooperation from each and every employe to enable them to fulfill their proper function.

Encouragement is given all employes to improve their positions, and promotions will be made on the basis of merit and ability.

Foremen and Supervisors at this Works are not interested in merely getting out production. They will be glad at all times to discuss your problems, to explain things you do not understand, and to help you fulfill your assignment. They should be consulted in regard to any question that you may have.

III. GENERAL INFORMATION

Confidential Information:

Because of the part this Works plays in the National Defense Program, every employe should be fully aware of his personal responsibility to guard against espionage or sabotage activity. Therefore, each employe should be careful of his conversation at all times and should not divulge any information concerning the activities of the personnel of the Works or its operation. Company activities or operations should not be discussed with, or in the presence of, outsiders.

Attendance:

Employes are expected to report for work on time and to be regular in attendance. If you expect to be absent, notify your foreman in advance. If you are unable to report for work due to sickness or other reasons, notify your foreman or your area office as soon as possible.

The Works will furnish transportation at change of shifts between the clock alleys and the change houses which are located at a considerable distance.

Time clocks will be used only as a check that the employe is on or off the Works. The actual time-keeping will be done by the area superintendent's organization. The employe's time starts when he reports on the job. The only exceptions to this are when daily baths and/or compulsory change of clothes is necessary; such time will be considered time worked.

Illness:

Employes who are eligible for Accident and Health Insurance or Disability Wages, as covered in the section on Industrial Relations Plan, should at the time of sickness immediately notify their supervisor in order that they may be protected under the plans. Employes, upon returning to work, must

present themselves first to the Medical Division for approval to return to work. This applies to all employes who have been absent on account of illness regardless of whether or not they are covered by the plans.

Garnishment and Assignment of Wages:

Employes should pay their just debts and must not make assignments of wages or permit their wages to be garnisheed. Such proceedings injure an employe's credit standing and are a great inconvenience to the Time Office.

Bulletin Boards:

Bulletin Boards will be found at prominent points throughout the Works and in the different departments. They should be consulted frequently for changes in operating rules, safety matters, and management notices.

Change of Address:

Notify your foreman and the Time Office of any change in your home address or telephone number.

Cleanliness:

Cleanliness is an important factor in safety, fire protection, sanitation and efficient operation. Keep your locker clean and help to maintain a clean and orderly condition in your locker room, wash room and working area.

Valuables:

Money and other valuables should not be left in lockers or in clothing which is not in use. The Company will not be responsible in case such articles are lost.

Lost and Found Articles:

The loss of any personal belongings should be reported promptly to the foreman of your Department and to the Patrol Division. Any article found should be turned in at the Patrol Headquarters.

After all, why not let safety be your hobby?

EMPLOYES' PASSES

Identification Pass:

Each employe will be issued an official Photo-Identification Pass. This pass consists of a folder, containing the employe's photograph, his description and his signature, officially authorized by the signature of the Works Manager.

Inspection of Pass:

Each employe wishing to enter the Works or the Administration Area will be required to identify himself by exhibiting this official pass to the patrolmen at the entrances. To expedite checking at the Works entrances, all employes are requested to have their passes ready for inspection upon approaching the gates. When requested to do so by patrolmen, or others authorized to check passes, employes must show their Photo-Identification Passes while within the Works.

Care of Pass:

Each employe is held strictly accountable for the official pass issued to him for entrance and exit from the Works or Administration Area. Lost passes will be replaced; but to avoid the loss of time, wages and the inconvenience of obtaining a duplicate, each employe should keep his pass in a safe place when not in use, and should always remember to bring his pass with him when he comes to work.

Passes as Identification for Wages:

Photo-Identification Passes issued to Company employes are not only identification for entering and leaving the Works, but they also serve as identification for receiving wages on pay day.

Forgotten or Lost Passes:

Employes who forget to bring their passes or who lose them will not be permitted to go to work until

replacements have been provided. Those losing or forgetting their passes should notify the Employment Office; and after due investigation is made, which may require as much as several days, replacements of passes will be made. If, due to the type of work an employe is performing, it is necessary that he be permitted to enter the Works without his regular pass, the following procedure will apply:

Temporary Passes:

A "Request for Temporary Pass" form will be made available in the Reception Room of the Administration Building in the case of office employes, and in the Reception Room of the Employment Office in the case of Works employes. The employe who desires a temporary pass will execute this form which will require the signature of his supervisor and a departmental superintendent. If the request for "Temporary Pass" is so approved, it will be exchanged for a "Daily Tag Pass" good for one day only, which will be issued under the signature of the Personnel Supervisor.

Passes Repeatedly Lost:

Employes who repeatedly appear without passes or who repeatedly lose passes will be subject to discipline.

Admittance Only in Line of Duty:

Entrance to the Works will be permitted only at times and during such hours as the employe is required in the line of duty. Employes will be permitted to enter the Works at other than these hours only after satisfactorily explaining the necessity for such entrance to the patrolman on duty.

Fraudulent Use of Passes:

Employes who present false passes, or the passes of others, will be discharged. The employes, whose passes have thus been wrongly used, will be dis-

charged if, in the opinion of the Management, they cooperated by collusion or negligence in the fraud or attempted fraud.

Temporary Passes One Day Only:

Employes who are signed up to go to work on the day on which photographs for passes are taken will be given a "Daily Tag Pass" signed by the Personnel Supervisor, which will be recognized only for that day.

Passes Must Be Carried at All Times:

When working conditions permit, each employe must keep his Photo-Identification Pass on his person at all times when within the Works.

Disk Badges Must Be Worn:

In addition; a colored, numbered disk badge, which will be assigned to each employe, must be worn visibly at all times, while the employe is within the Works. This badge will designate the department to which the employe is attached. It is required that employes remain within their own departments at all times, except when duties or other justifiable reasons require their presence elsewhere.

Employes Are Restricted to Such Places as Their Duties Require:

An employe may be challenged by the patrolmen, or others authorized to do so, (the latter including any foreman or higher authority) to identify himself at any time while he is within the Works; and if it is determined that he is in a department of the Works other than that in which he has reason to be in line of duty, or in the line of personal needs, he will be subject to dismissal by the Management.

IV. INDUSTRIAL RELATIONS PLANS AND PRACTICES

Certain plans and practices have been adopted by the Company dealing with the relationships between the Company and its employes and designed to promote employe security and to assist employes in case of illness, accident or old age, and the dependents of an employe in the case of his death. These are known as Industrial Relations Plans and Practices. All are important and valuable, but only a brief summary of each can be given in this booklet. However, many of the plans are printed in pamphlet form and copies may be secured from the Industrial Relations Division. In addition, your foreman or the Industrial Relations Division will be glad to supply any information you may require concerning these plans and practices.

LENGTH OF SERVICE

Continuity of Service Rules:

The privilege and extent of participation under many of these Plans are governed largely by the length of time that an employe has been employed by the Company. Rules which are known as "Continuity of Service Rules" have therefore been adopted in order to define an employe's length of service and to determine the conditions which do or do not cause a break in service. As used hereafter in this pamphlet, "service" means length of service as determined by those Rules.

In general, an employe's service begins on the date he is first hired by the Company, and continues as long as his name remains on the salary roll or payroll.

An employe's service is broken if he is discharged for cause; or if he quits work; or if he is absent from work for more than sixteen consecutive days without a written leave of absence; or if he is laid

off on account of lack of work and is not rehired within one year. In all such cases he starts again as a new employe if he is rehired.

There is no break in service if an employe is laid off on account of lack of work and is rehired within one year, but the time he is absent from work is deducted from his total length of service. Also, there is no break in service if an employe is absent with permission for not more than sixteen consecutive days; but any absence in excess of sixteen consecutive days must be covered by a special written leave of absence in order not to break an employe's service record. If such leave of absence is granted without pay, the time that the employe is absent is deducted from his total length of service; but if the leave is granted with pay, the time absent is not deducted from his total length of service.

An employe's absence on account of a Works injury or while being carried on the Disability Wage Roll or while on vacation does not affect either his continuity or his length of service. His service record continues just the same as if he were actively at work.

INSURANCE PLANS

Group Life Insurance Plan:

Under this Plan the life of each employe, after he completes one year of service, is insured through the Equitable Life Assurance Society. The Company pays the entire cost of this insurance.

Employes having dependents are first insured for $700; and each year thereafter this amount is increased by $200 until the total amount of insurance reaches $1500 at the end of five years of service. An employe without dependents is insured for $300, and this amount is not increased as long as the employe remains without dependents.

In order to qualify as a dependent, a beneficiary

must be an employe's wife or husband, child, parent, blood relative to whose support the employe contributes at least 20% of his wages or salary, or some other person to whose support the employe contributes 20% of his wages or salary, provided such other person is approved by the Board of Benefits and Pensions as a dependent beneficiary.

This Plan also provides that in case an insured employe becomes totally and permanently disabled before reaching age sixty, the insurance will be paid to him in monthly installments. Pensioners retain their insurance just the same as if they were actively at work.

The insurance is cancelled when an employe leaves the service of the Company. It may then, however, be converted into any form of standard policy (except Term Insurance), without physical examination, upon payment to the insurance carrier of the premium at the employe's then attained age. Application for conversion should be made to the Equitable Life Assurance Society not later than thirty-one days after the employe leaves the employ of the Company.

Group Accident and Health Insurance Plan:

The purpose of this Plan is to provide, through insurance and at a low cost, an income for employes during periods when they lose time because of sickness or accident not covered by Workmen's Compensation.

The Plan is carried with the Equitable Life Assurance Society. It is open to employes after they have completed six months of service. No medical examination is required if an employe applies for the insurance at the time he is first hired, or at the latest within thirty-one days after he completes six months of service.

The cost of the insurance is paid partly by employes through monthly deductions from their wages and salaries, and partly by the Company. The present cost to an employe and the weekly benefit payable to him when he becomes disabled depend on his yearly earnings, as follows:

Class	Yearly Earnings	Weekly Benefits	Monthly Cost to Employes
A.	Under $900	$ 7.00	$ .29
B.	$900 but under $1200....	10.00	.47
C.	$1200 but under $1600...	15.00	.76
D.	$1600 but under $2000...	20.00	1.05
E.	$2000 and over	25.00	1.35

Benefits begin with the eighth day of disability. They are paid each week thereafter as long as the employe is disabled, but not longer than thirteen weeks for each disability (six weeks in pregnancy cases).

The insurance ends when an employe is pensioned; or is granted a leave of absence for any reason other than disability covered by the Plan; or is transferred to work outside the United States; or leaves the service of the Company.

Salary Allotment Insurance Plan:

The amount of free group life insurance provided by the Company is usually only enough to pay sickness and funeral expenses and to take care of an employe's dependents for a short time. The Salary Allotment Insurance Plan has therefore been adopted so that employes may buy, under favorable conditions, more life insurance for the benefit of their dependents.

This plan is carried with the Travelers Insurance Company. Under its terms any employe having one or more years of service may apply for any type of standard life insurance issued by that Company. The Plan has the following advantages:

(a) The insurance is written at the Works or office with no loss of an employe's time;

(b) Medical examinations are not required in most cases, and where required they are in a simple form;

(c) The standard insurance rates are not increased on account of occupational hazard; and

(d) The costs of the insurance are paid in small installments through monthly deductions from wages or salary.

An employe who leaves the service of the Company may continue any insurance taken out under this Plan by making the regular premium payments direct to the Travelers Insurance Company.

SPECIAL BENEFITS AND PENSIONS

Disability Wage Plan:

The purpose of this Plan is to protect eligible Wage Roll employes against loss of income during periods of non-occupational illness or injury by paying them full wages, known as "Disability Wages," during such periods. A non-occupational illness or injury is one **not** arising out of or in course of employment with the Company.

To be eligible to receive Disability Wages, an employe must have one or more years of service, show satisfactory evidence of disability, and be willing to cooperate with the Company's Medical Division. The Company pays the entire cost of the Plan.

In each case of disability coming under the Plan, Disability Wages start after the employe has lost two whole days' pay. They continue as long as the disability lasts, but not longer than three months from the date the disability began (six weeks in pregnancy cases). Disabilities caused by the use of

Believe it or not, the injury does not always happen to the other fellow.

drugs or intoxicants or by wilful acts contrary to law and order, and intentionally self-inflicted injuries or illness, are not covered by the Plan.

Special Benefits Plan:

This Plan provides the following Special Benefits for employes who incur occupational injury or disease arising out of and in the course of their employment with the Company, and for the dependents of employes who lose their lives thereby:

(a) Reduction of the statutory "waiting period" before Workmen's Compensation begins to two whole working days and the fractional part of the day in which the employe becomes unable to work;

(b) Medical and surgical treatment, special surgical appliances, artificial limbs, special awards in unusual cases, funeral expenses, etc., beyond the legal requirements;

(c) Financial assistance for rehabilitation and special training and treatments in cases where through occupational causes the earning power of an employe has been seriously diminished; and

(d) With respect to employes having one or more years of continuous service, extra payments in addition to the regular weekly Workmen's Compensation in such an amount that the disabled employe's total weekly income (Workmen's Compensation plus the extra payments) will equal his normal weekly wages.

Pension Plan:

This Plan provides for the retirement on pensions of employes with fifteen or more years of service when they reach age 65, or at an earlier age if they become permanently incapable of per-

forming the normal duties incident to continued employment by the Company.

The amount of a monthly pension is 1% of the employe's average monthly pay during the last ten years of his service multiplied by the total number of his years of service; except that for all service with the E. I. du Pont de Nemours & Company prior to January 1, 1925, the amount of monthly pension is 1½% of the average monthly pay referred to above multiplied by the total number of years of such service. When and if a pensioner becomes eligible for a Federal Old Age Pension, the amount of the du Pont pension is reduced by one-half of his Federal Primary Insurance Benefit calculated on the basis of his earnings and service with the Company while covered by the Federal Social Security Act, which represents that portion of his Federal Pension for which the Company has paid through taxes.

In special cases, pensions may be extended in whole or in part after a pensioner's death to his dependents if necessary for their support.

MISCELLANEOUS PLANS AND PRACTICES

Vacation Plan:

The purpose of this Plan is to provide vacations with pay for Wage Roll employes.

All employes receive vacations who have completed one year of service and who have satisfactory attendance records during the twelve months preceding the vacation. The length of the vacation is two weeks.

An employe laid off on account of lack of work, who is eligible for a vacation and who has not already been granted a vacation during the current calendar year, will be granted a vacation allowance equivalent to one week's vacation pay if laid off prior to May 1, or to two weeks' vacation pay if

laid off on or after May 1. No vacation or vacation pay will be allowed in case of resignation or discharge for cause.

Vacation pay may be drawn in advance. The amount of vacation pay is based on the employe's current hourly earnings and the number of hours constituting the work week at the employe's point of employment.

Lay-Off Notice Plan:

It is the Company's policy to give all employes as much notice as is practicable before lay-off on account of lack of work.

Wage Roll employes having one or more years of service are given not less than one week's notice before such a lay-off. In cases where one week's notice is not practicable, one week's pay is given in lieu of notice. The amount of such pay is the sum of money that the employe would reasonably have been expected to earn if he had worked during the week for which pay in lieu of notice is given.

Bonus Plan:

Under the Bonus Plan awards may be made to employes for valuable inventions and improvements or for other unusual service which justifies a larger award than can be made under a Suggestion Plan. Bonus awards are made in the form of cash or in the form of common stock of E. I. du Pont de Nemours & Company. Their amounts depend on the value of the inventions, improvements, or the unusual service to the Company.

Service Pin Plan:

As a symbol of long service, a gold pin bearing the word "Du Pont" in an oval is issued to each em-

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The only one that should put faith in a rabbit's foot is a rabbit.

ployе upon completion of five years of service. An engraved star is added to this pin for each additional five years of service up to and including twenty years' service.

Upon completion of twenty-five years of service, a white gold pin of similar design set with four diamonds is presented to each employe, and this pin becomes the employe's permanent property.

V. GENERAL POLICY RULES

Smoking:

Smoking is forbidden in the Works, except within the fenced-in Administration Area.

The penalty for any violation of this rule is permanent discharge.

Matches, Lighters or Other Flame Devices:

The carrying of matches, lighters or other flame devices within the Works, except within the fenced-in Administration Area is forbidden, unless special permission has been granted under regulations applying where flames are required in the performance of work. Any premeditated or intentional violations subject an employe to immediate permanent discharge, otherwise the penalties for violation of this rule are:

(a) If detected on employe at Works entrances:
1st Offence—One (1) day lay-off without pay.
2nd Offence—One (1) day lay-off without pay.
3rd Offence—Discharge.

(b) If detected on employe within the Works;
1st Offence—Two (2) weeks' lay-off without pay.
2nd Offence—Discharge.

The penalties described in (a) and (b) above are to be combined in their application. Thus, if two violations have occurred at the **Works entrances**, a third violation will result in discharge of the employe, whether it occurs at the **Works entrances** or **within the Works.**

(c) Recognition of Honesty

If an employe finds matches or other flame producing devices either on his person or lying about, except during a search, he shall have the right to surrender such items to his supervisor or a guard without penalty. The supervisor will immediately call a guard who will dispose of such items according to instructions.

The more you hear of safety, the less you hear of injuries.

(d) Searches of Employes

Searches of employes will be conducted by guards at the **Works entrances** and by the supervisors of employes or by guards **within the Works** in a prescribed manner which will recognize the personal rights and privileges of employes.

(e) Duration of Penalty Record

Records of penalties as provided in this Section will be continued and be applied for one year from the date of the violation. Thus, after one year has elapsed from the date of any single violation, that particular violation will be removed from the employe's record and will cease to apply.

Fire Arms:

Fire arms are not permitted on the Works. Any employe found with fire arms in his possession within the Works, or attempting to enter the Works with fire arms will be discharged. This does not apply to members of the Protection Division for such fire arms as are issued to them for use in the line of duty, or to persons granted permission by the Commanding Officer or Works Manager to enter the Works with fire arms in their possession.

Cameras and Photographic Equipment:

Cameras and other photographic equipment are not permitted on the Works except by permission of the Commanding Officer or other official delegated the authority by him to grant such permission. Any employe who violates this regulation will be discharged.

Narcotics and Intoxicating Liquors:

Narcotics and intoxicating liquors are not permitted on the Works. Any employe found on the Works in possession of these items or under the influence of them will be discharged.

A flight of imagination often ends in a tailspin.

Employes with intoxicating liquor on their breath will not be permitted on the Works and will be subject to discipline if found so.

Gambling and Fighting:

Gambling and fighting are not permitted on the Works, and employes engaging in these activities on the Works will be subject to discharge.

Safety Rules and Regulations:

All safety rules and regulations are for the mutual protection of employes and the Kankakee Ordnance Works. Such rules and regulations should be adhered to. Violations must necessarily be subject to disciplinary action.

Area supervision will determine when it becomes advisable to close down certain operations during a thunder storm and will see that all employes leave these operations and go to a safe place.

The speed of all cars and other automotive equipment within the Reservation is limited to speeds as designated on the various roads. Anyone who exceeds these speed limits will be subject to discipline.

Employes driving vehicles of the Kankakee Ordnance Works on highways outside of the Reservation must obey all traffic regulations as required by law or ordinance. Employes who violate these regulations will be subject to discipline.

Miscellaneous:

No personal automobiles will be allowed within the Works, except by permission of the Commanding Officer or Works Manager or other officials designated by them to grant such permission. Where such permission is granted K.O.W. plates will be assigned.

No solicitations of any kind whatsoever will be allowed within the Works.

No printed material of any kind will be posted on bulletin boards within the Works, except that pertaining to Federal, State or Company matters.

No manuals, blueprints, or flow sheets of any kind are to be taken out of the Works, except by a duly authorized written permit.

Passes for the removal of personal clothing from the Works may be secured from a supervisor or higher authority.

The Works will furnish all tools to mechanics, and no personal tools will be allowed within the Works.

No pay advances will be made.

VI. GENERAL SAFETY AND FIRE PROTECTION RULES

Safety and Fire Protection:

Employes of the Kankakee Ordnance Works are expected to work safely. It is possible to work without injuries. Every reasonable effort is made to guard all machines and equipment and to provide a safe, comfortable place to work. Guards on machinery can go only part of the way. The alertness of the workmen, the development of safe working habits and the willingness to follow standard working procedures are each a definite and vital part of the safety program.

Resolve to work safely and urge your neighbor to do likewise. No one on the job should take chances. Careless workers are a menace to themselves and to those with whom they work.

Know the "WHY" and "HOW" of your job before you go ahead—Don't Guess.

Reporting Injuries:

All injuries no matter how slight must be reported to your foreman and must be treated at the Medical Building as soon as possible. Do not resort to home treatment.

Unsafe Practices and Conditions:

All unsafe conditions that you see on the Works should be reported so that they can be corrected. Be safety conscious at all times.

All unsafe practices should be reported. These, when noted, can be discussed at Safety Meetings, and plans made to correct them. An unsafe workman is a liability to himself and to his fellow workmen.

Walk on the sidewalks rather than on the vehicle

roads. If you must walk on the roads, always walk on the left side of the road facing traffic.

Housekeeping:

A clean Works is a safe works. All employes should see that their building or work place is clean and orderly.

Aisles should be kept clear, and access to exits must never be blocked.

Materials should be stacked in an orderly and safe manner.

Spilled materials should be cleaned up at once.

Trash and other waste materials must be placed in proper receptacles and not allowed to accumulate.

House or Shop Rules:

The rules posted for your house or shop should be studied. Follow them and any instructions given by your foreman carefully.

If your work takes you into other buildings, as in the case of repairmen, be sure to contact the house foreman and read the house rules before proceeding.

If you are not sure, ask and find out the correct method. Never experiment.

The number of men in certain buildings is limited and so posted. Make sure your presence does not exceed the man-limit.

Machine Repairs:

Employes should never work on any machinery without first removing the drive belt or locking out the starting switch. Do not depend on clutches or idler belts—they may creep or shift. Every precaution must be observed to prevent the possibility of machines being started by accident, or through some misunderstanding.

Highways that lead to safety: Fairness, alertness, courtesy and knowledge.

Machine Guards:

Machines should never be started unless the guards are in place. Report any defective guards immediately.

Electrical Equipment:

It is a good practice to stand at the right of switches and operate the handle with your left hand.

Electrical repairs of any nature should be made by regular repairmen.

Hazardous Materials:

There are materials within the Works which are hazardous unless properly handled. It is necessary that all employes obey instructions, and use the protective equipment provided. "Short cuts" will not be allowed, and for your own protection should never be attempted.

It is extremely important that all materials be placed in, and always kept in the proper containers —do not use substitutes.

Body cleanliness is important for your health, regardless of the type of work you are doing.

Food should not be taken into operating buildings unless permission is granted by the supervisor.

Safety Shoes:

Workers in certain areas must wear special powder shoes. These shoes will also be available to mechanics and others having business in those areas.

Special safety shoes are available to those working in the Acid Area.

Regular safety shoes are available for employes of other areas.

Clothing:

Do not wear loose fitting clothing or flowing ties. Wiping rags should not hang outside of pockets.

Jewelry should be avoided, especially finger rings.

Safety thought is fine brain food.

Wrist watches should not be worn in operations where they may do damage or be damaged if dropped into equipment.

Irritating and Toxic Materials:

Employes should avoid any unnecessary exposure to irritating or toxic materials such as Acid, Ammonia, Toluene and D.M.A. In the case of these four, the fumes or vapors are harmful to breathe, and the materials are harmful if they come in contact with the skin.

If an employe should become affected by breathing the fumes or vapors of Acid, Ammonia, Toluene or D.M.A., he should report at once to his supervisor and to the Medical Division for treatment.

If Acid, Ammonia, Toluene or D.M.A. should come in contact with the skin of an employe or enter his eyes, it should be washed away at once with plenty of water. The employe should then report at once to his supervisor and the Medical Division.

If Toluene or D.M.A. is spilled on an employe's clothing, the clothing should be removed promptly.

Roped Off Areas:

Roped-off areas are danger zones, and shall be respected as such. Admittance to, or passage through, such areas is prohibited except to those who have been instructed to work within the roped-off area.

Entering Tanks, Pits or Other Enclosures:

Certain definite precautions should be taken before entering tanks, pits or other enclosures that may contain harmful gases or substances or that may not contain sufficient good air to support life. Departmental safety rules outline the proper procedures to follow, and employes should not enter such en-

closures, except upon direct instructions from their supervisors.

Emergency Equipment:

In order that employes may act quickly and without confusion in times of emergency, they should learn the location and proper operation of all the emergency equipment they may be called upon to use. This applies to such equipment as the following: fire alarm boxes, telephones, gas masks, respirators, fire extinguishers, stretchers and safety showers.

Any protective equipment which you use or may be required to use in your work should be inspected daily to make certain that it is in good condition. If defects are found in any of this equipment, they should be reported to your supervisor at once so repairs or replacements can be made.

In the event employes use gas masks or fire extinguishers, such use should be reported to the Safety and Fire Protection Division so that the equipment may be replaced promptly.

Match Permits—Burning and Welding:

Matches must be kept in a standard metal container and a permit must be obtained for each container.

Sparking devices for lighting torches must be carried in the standard metal container and treated the same as matches.

A special permit must be obtained from the supervisor of the area involved for any burning, welding, or similar operation to be done other than at regular designated locations; such as, the burning ground, machine, blacksmith and other shops.

Fire Extinguishers:

Study the directions on the extinguishers. Learn their proper use and manual operation. Check with the Fire Department if in doubt. The various types are:

SODA AND ACID (FOR ORDINARY FIRES)
FOAM (FOR OIL FIRES)

CARBON TETRACHLORIDE (FOR ELECTRICAL FIRES—DO NOT USE ON ACID)

CARBON DIOXIDE (FOR ELECTRICAL AND OIL FIRES)

Fires:

In case of fire, call the Fire Department by fire alarm or phone, preferably by fire alarm.

If feasible, use fire extinguishers between time fire starts and Fire Department arrives.

Do not go to the scene of a fire out of mere curiosity. You will be in the way of those who have a duty to perform.

A careless man and a good job are soon parted.

Safety Rules
Tetryl Department

TETRYL

SAFETY RULES

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GENERAL DEPARTMENTAL SAFETY RULES
TETRYL AREA

1. All persons entering the Tetryl Area shall be required to wear a long sleeved shirt or coveralls, hat or cap, safety glasses and must wear powder shoes in every house but the Recovery Bldg. or Sulfator Bldg. where acid shoes are permitted.
2. Clothing worn in operations handling dry tetryl should be changed every day. Operators in wet powder or acid should change clothing when necessary.
3. Clothing worn by tetryl operators should never be worn out of the Area.
4. All tetryl operators are required to take a bath when going off shift.
5. Gloves must be worn wherever possible and should be discarded when they have become impregnated with poisonous compounds.
6. While in the Area all persons must wear safety glasses except when goggles are required.
7. All ladders except step ladders used on smooth floors must be held by a person standing at the bottom, or must be tied securely at the top, or must be equipped with safety feet.
8. No extension light cord may be used which is not in good condition or does not have a tight vapor proof globe. Each cord must be inspected by the electric shop each month.
9. No electric drill is allowed in any tetryl building except by special permission from the Area Supervisor.
10. No welding is allowed in any tetryl building except by special permission from the superintendent or assistant superintendent.

After all, why not let safety be your hobby?

11. No tool should be used unless in good condition, and any tool which becomes defective while in use should be dicarded at once and a report made.

12. When breaking flanges in a pipe line or removing a flange from a vessel, at least two nuts must remain on the bolts in a loosened condition until after the joint is broken and any possible pressure is released.

13. Steam hoses must be equipped with standard approved connections, are not to be used with pressure exceeding 15 lbs. and should be handled with extreme care. The use of garden hose for steam is prohibited.

14. All lines leading to a tank must be blanked off before any one enters.

15. Upon entering any tank two men must be present. The one entering the tank must be equipped with a life line and belt while the other man stands outside available for assistance. (See special rules for tank work)

16. In all cases where there are likely to be poisonous vapors present, the correct gas mask must be worn.

17. While repair work is being done on agitators, pumps, or any electrical equipment, the switch must be locked out.

18. Any man inhaling nitric fumes in sufficient quantity to cause continued coughing after exposure must report to the Plant Hospital at once. (See special rules on fume poisoning)

19. Repair work on acid equipment must not be started unless water is at hand. Whenever possible, acid equipment should be washed off

thoroughly with fresh water before repairs are started.

20. Acid samples must be conveyed in suitable carriers, and rubber gloves must be worn while taking acid samples.

21. No matches are permitted upon the Works.

22. Report to your foreman all injuries or sickness, so that proper treatment may be received.

23. All employes must cooperate to maintain a clean plant, both inside and outside of all buildings.

24. Keep passageways and exits clear of obstructions at all times.

25. All rags and waste must be kept in containers provided. Waste rags should be dampened immediately after use. Keep acid rags and grease rags separate.

26. Know the location of the fire alarm box nearest to your operation. Fire protection equipment is for use in case of fire only, and must never be used for any other purpose.

27. No employee shall be permitted to work within reach of any unguarded belt, shaft, gear or pulley while it is running.

28. Compressed air must never be used to dust off clothing.

29. All safety showers shall be tested once each day. Water should run long enough to clear sediment out of line. Space under shower shall not be obstructed at any time.

30. Gas masks must be maintained in proper working order. Whenever a mask is used, it must be returned to the Fire Department, with the date card completely filled out.

A minute for safety is better than a month for repairs.

31. "Horseplay" will not be tolerated on this Plant.

32. Powder buggies should always be pushed with the large wheels in front. A distance of 50 feet must be maintained between buggies while pushing them on the walks. When buggies are parked on the walkway, a minimum of 5 feet distance must be maintained between them.

33. No tetryl is allowed in the office building, change house or maintenance shop.

34. Flashlights and lanterns must be of the permissible type and properly maintained.

35. Wrist watches and rings must not be worn while operating equipment in production.

36. All acid valves must have protective hoods.

37. Rope off, dilute with water all acid spills.

38. All equipment before leaving operating building for repairs must be free of any acid or tetryl.

39. Question and identify all strangers coming into the Area.

40. Never under any circumstance return any material to any tank.

41. The use of safety chutes must conform with standard plant procedure.

42. No experimental work is allowed by the operating personnel unless authorized by Superintendent's Office.

43. When a valve has been completely opened, close it about one-half turn to make it easier to tell if open or closed.

44. All powder spills must be cleaned up immediately.

45. Sleeping will not be tolerated at any time.

Any fool can take a chance—but why be a fool?

TETRYL LABORATORY SAFETY RULES

1. EYE PROTECTION

Eye protection is of prime importance and employes are supplied with spectacles for general protection and goggles of various types for specific eye hazards.

Injury to the eyes is likely to occur at any time and at any place on the Plant. Spectacles are required to be worn where the risk is slight but goggles of the proper type must be used where there is a definite eye hazard. See the rules covering your department.

2. EQUIPMENT

Become familiar with the location of nearest fire alarm box, fire extinguishers, and fire blanket, and satisfy yourself that you know how to use them in case of emergency.

3. COMBUSTIBLES

See that all combustibles—cloths, clothes, rags, paper, wood—are kept out of contact with radiators and steam pipes.

Steam temperatures are sufficient to initiate fire under a variety of conditions.

4. STRONG ACIDS

Bottles containing concentrated acids must not be left on wood tables or shelves.

Wood, rags, paper, etc., can be fired by strong acid. The risk is from a broken, cracked or upset bottle. Also woodwork is "eaten" and damaged by acids.

5. SOLVENTS

Approved safety cans shall be used for obtaining and handling stocks of inflammable solvents. Alcohol, Acetone, Benzene, or other in-

flammable liquids must be kept in outside storage provided. From this storage, replenish the reagent bottles as required.

Danger from these solvents is in proportion to the quantity at hand. The necessity for open flames in the laboratory calls for constant vigilance in keeping these solvents and their vapors segregated and confined. Remove samples of Benzene and other inflammables from building as soon as possible.

6. IGNITION OF VAPORS

Many serious fires and injuries have resulted from handling or using volatile solvents near open flames or electrical apparatus. Acetone, and Benzene are the most common risks. Do not evaporate these liquids on electric hot plates with exposed elements or switches, and do not use them near lighted burners. Care must be exercised to keep inflammable vapors out of electric ovens.

Also, remember that fire will strike back along the vapors to their source and may fire or explode the container. Become "Fire Conscious" when working with or near these solvents.

7. FUMES

Every precaution must be taken to avoid the escape of noxious or disagreeable fumes in the laboratory. Ammonia, and Nitrogen Oxides are cautioned against.

When a fume condition exists, the first consideration is to warn those exposed to the fumes and then augment ventilation to dissipate the fumes quickly.

Any person who has inhaled Nitrogen Oxide vapors to the extent that he notices even a slight effect in mouth or throat must report to the Hospital immediately. Failure to do so may have serious consequences. (See special rules on fume poisoning)

8. WASTE CANS

Special waste boxes are conveniently located in the laboratory to receive **only broken glassware and bottles.** Disposal of this material presents a special hazard and no broken glass shall be placed in receptacles used for waste paper, etc.

Broken bottles or apparatus that have acid, caustic or other risky chemicals in or on them should be thoroughly rinsed before depositing in waste boxes.

Any materials that may react on each other chemically become fire hazards in the waste receptacles.

All broken (chipped or cracked) glassware must be discarded immediately.

9. FOCUSED RAYS

Flasks containing water or clear liquids must not be left standing where the sun's rays can fall on them. Fires have been started by focusing the rays in this manner.

10. USE OF PIPETTES

Direct suction of mouth must not be used in filling pipettes with acids, caustics or poisonous liquids. Use a rubber bulb. Very painful and and dangerous mouth burns have resulted from neglect of this precaution.

Injuries can be stopped. Are you doing your part to stop them?

11. CARRIERS

Approved bottle carriers are furnished and must be used for carrying samples of acid from one part of the Plant to another.

12. PROTECTIVE APPLIANCES

Several articles are regularly supplied to the laboratory employes for their personal protection. The transparent FACE SHIELD **must** be be worn when generating gas in the nitrometer. This shield is also useful in occasional tests to guard against splash of hot or corrosive liquids. Protective spectacles **must** be worn continually by **all** persons while in the laboratories. RUBBER GLOVES AND APRONS are supplied to obviate risks and to protect hands and clothing from acids.

13. SHOWER, BLANKET, GAS MASKS

Safety showers are conveniently located in the acid rooms for the purpose of flooding any acid spill on body or clothing. It is the Supervisory Chemist's duty to flush these showers weekly, and each man must know how to use them in case of emergency. Become familiar with the location, purpose and use of the FIRE BLANKET and GAS MASKS.

14. EVACUATION OF APPARATUS

Do not connect the vacuum pumps to any bottles, flasks, or containers other than those intended for high vacuum service. Ordinary bottles and apparatus may collapse under high vacuum and cause serious results. In filtering strong caustic, permanganate or other solutions, use a large Pyrex suction flask to catch the filtrate. Under no circumstances should suction

be connected to a stock bottle to receive the filtered solution.

15. ELECTRIC APPLIANCES

Electric appliances used in the laboratory must pass monthly inspection by Maintenance Department.

16. BOXES FOR BURETTE ALIGNMENT

Wooden boxes used in burette alignment must be kept under the benches when not in use.

17. CLOSED DOOR

Door between acid and powder laboratories must be kept closed at all times while not in use.

SPECIAL SAFETY RULES
POWDER LABORATORY

1. **FLOORS**

The linoleum floor covering shall be kept in good repair in order that there will be no cracks or breaks to catch and hold small amounts of explosives. Any spills should be cleaned up immediately.

2. **WINDOWS**

These must be protected by outside hoods or frosted glass in such a manner that direct sunlight cannot fall upon benches or explosives inside the building.

3. **SAMPLES**

Samples coming into the laboratory shall be placed in a specific location designated for them and should remain there during analysis. Wherever possible, samples should be removed from the building as soon as the necessary portions have been withdrawn from them. No explosives samples other than tetryl are allowed in the laboratory at any time.

4. **TRANSPORTING SAMPLES**

Explosives shall be enclosed in the containers provided to avoid possible breakage of bottles or spillage during delivery by auto-messenger.

5. **ELECTRIC OVENS**

If any explosive is spilled in the electric oven, pull out the plug connection to circuit, remove baffle-plates and heating elements if necessary and **clean thoroughly,** using a wet cloth to wipe out any remaining dust particles. **Do not place samples on floor of oven.**

Believe it or not, the injury does not always happen to the other fellow.

Keep a thermometer in each oven and see that the proper temperature is maintained.

The specific drying time of explosives in ovens must not be exceeded.

6. ROTAP SIEVING MACHINE

Dust inside the Rotap cabinet is unavoidable. Clean the interior daily, wiping the metal posts and parts with an oily cloth and keeping floor of machine covered with a film of machine oil.

7. HOUSEKEEPING

Constant vigilance is necessary during the routine work, to prevent small amounts of powder from being scattered on bench, on floor, in balances, in carriers, in drying ovens. Keep in mind that tetryl so scattered will quickly dry out and present a hazard through shock or friction.

Plan and conduct the work so that the building will present a clean and orderly appearance at all times. Dispose of any excessive or idle equipment and examine all drawers and cupboards periodically to clean out useless materials.

8. DISPOSAL OF WASTE FROM THE TETRYL LABORATORY

(a) Tetryl Samples shall be dumped into a paper lined catchbox. The box shall be picked up 2 hours before shift change and delivered to the refineries to be used as adding powder. A chemist must accompany the driver and obtain a receipt from the R. O.

Gov. dry refined tetryl shall be composited (50 gms. from each sample) by that shift on which the government lot number is

completed. These composites shall be stored in the tetryl magazine until the government sends an acceptance sheet. Composite samples are dumped on this basis, and are dumped into the same box as the other samples.

(b) Waste benzene and acetone used in the Laboratory tetryl room must be poured into a sink draining directly into a 5 gallon waste can. The waste materials will be picked up daily and taken to the burning grounds and burned.

(c) A large number of waste acids are poured directly into the acid room sink. A continuous flow of water must be maintained through the sink.

(d) Any acid sample containing nitric acid must be poured into 2½ liter waste acid bottles. Once a shift these bottles must be taken to the creek and emptied.

(e) Waste mineral oil shall be disposed of each month on a trip to the burning grounds. It has its own 1 gallon safety can for storage and transportation.

(f) All broken glass shall be placed in a wooden box and disposed of by the service department.

(g) Waste paper will be picked up regularly by service department's truck and taken to the burning grounds.

Cloth and paper containing tetryl or inflammable liquids will be picked up by the waste powder truck and taken to the burning grounds.

(h) Any non-routine samples or materials shall be inspected by the Day Chemist and he shall decide on the best method of disposing of them.

WASTE ACID DECOMPOSITION AND FUME RECOVERY

1. Operators shall be required to wear a woolen shirt and pants, broad-brimmed felt hat and safety shoes in the Waste Acid and Fume Recovery Building.

2. Operators must wear acid or rubberized gloves and goggles when rodding tanks, taking samples, adjusting overhead valves and at any other time when there is a possibility of acid splashes or sprays.

3. Goggles, raincoat and rubber gloves must be worn by operator when connecting or disconnecting a tank car.

4. Full protective equipment, including acid suit, hood, and rubber gloves, must be used when venting a tank car, when working around a car under pressure, when breaking any acid line, and when working in the pulsometer pits.

5. Rubber equipment must be thoroughly cleaned after being used.

6. Keep air hose and clamp in good condition for blowing tank cars.

7. It is the duty of the AFRO to test safety showers daily and to report any defects at once.

8. Before repairing a pulsometer leak, the pulsometer should be washed with water and the adjacent pulsometers must be shut off.

9. Avoid breathing all fumes; if fumes are breathed, report this fact at once. (See special rules on fume poisoning).

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10. Dispose of all acid eaten putty promptly by sending it to burning ground.

11. Use great care in breaking acid lines to release pressure; stand back of the direction in which the acid might spurt when line or valve is open. See Rule No. 4.

12. Know the location of gas masks and know how to use and care for them.

13. Report all leaks promptly. Protect others from overhead leaks by roping off the space and posting warning signs.

14. Don't close a valve too quickly, as pressure may develop due to velocity of acid in line.

15. When preparing to pump acid, measure receiving tanks before pumping to see that there is sufficient room; also follow lines after starting pump, to see that there are no leaks, that valves are properly set, and that the acid is actually moving.

16. In preparation for making repairs on inside of tank, disconnect and blank all lines, then wash with water and soda ash. After tank is repaired, it must be thoroughly inspected.

17. When working on acid lines, water must be available at all times.

18. When removing a cap or flange for measuring a tank, wear goggles and keep back so that if there is pressure in the tank, it will not blow acid spray in your face.

19. Know the location of the nearest shower at all times so that it can be reached without delay in case of an emergency.

The only one that should put faith in a rabbit's foot is a rabbit.

20. Acid samples must be conveyed in suitable carriers.

21. Safety chains on the cat walks must be kept hooked at all times when not in use.

22. Use car chocks and warning signs on the south rail when cars are spotted for loading and unloading. Remove these devices as soon as the car has been prepared for its removal.

23. Never use more than 30 lbs. of air when unloading a tank car.

24. Before car leaves Area be sure all openings are sealed, that the car is washed free of acid, and that the loading platforms are clear of the car.

25. Floor sweepings and all waste materials must be kept in the proper receptacles. All such containers should be emptied daily and the house maintained in good order and cleanliness.

26. Report all injuries, no matter how slight, to the foreman immediately.

TETRYL SULFATING HOUSE

1. Safety shoes and woolen clothing and felt Hat must be worn in the sulfator operation.

2. No repairs should be made while house is in operation except in case of emergency; all such work must be approved by the Area Supervisor.

3. Floor sweepings and all waste materials must be kept in proper receptacles. All such containers should be emptied daily and the house maintained in good order and cleanliness.

4. All injuries, no matter how slight, must be reported to the foreman immediately.

5. When a valve has been completely opened, close it about one-half turn to make it easier to tell if it is open or closed.

6. The sulfator operator must test safety showers daily and report defects at once.

7. Each operator is furnished with goggles and rubber gloves. These must be kept in good condition and used when there is danger of acid splashes.

8. Report all leaks promptly; rope off the space, and post warning signs.

9. Use great care in breaking acid lines to release pressure. Stand back of direction in which acid might spurt when line or valve is opened. Wear full acid protective equipment.

10. Know the location of nearest gas mask, safety shower, and fire extinguisher.

11. When liquids are being pumped, all receiving tanks must be measured before pumping to see that there is sufficient room.

A flight of imagination often ends in a tailspin.

12. Wash DMA and sulfating acid spills immediately. Great care should be taken with DMA because of its toxicity.

13. Use car chocks and warning signs on the south rail when cars are spotted for loading and unloading. Remove these as soon as the car has been prepared for removal.

14. Never use more than 30 lbs. of air when unloading a tank car.

15. Before car leaves Area be sure all openings are sealed and that the car is washed free of acid.

16. Open valves in lines leading to and from DMA unloading pump before starting pump.

SPECIAL SAFETY RULES

TETRYL NITRATING HOUSE

1. Not more than six persons should be permitted within this house at one time.

2. Powder uniforms and powder shoes must be worn by the operators in this building.

3. No repairs should be made while house is in operation, or while charges are in the building, except in case of emergency. Emergency repair work must be approved by the Area Supervisor before work is commenced. Not more than one repair man is allowed in house during operation. House limits must be observed at all times house is in operation.

4. Floor sweepings and all waste materials must be kept in proper receptacles. All such containers should be emptied daily and the house maintained in good order and cleanliness.

5. The nitrator plug cock must be carefully cleaned and greased before each charge is started. Before removing plug be sure plug cock is in open position.

6. Mixed acid in the nitrator must be at least 135°F., with agitation running, before beginning the DMAS feed.

7. While dropping mixed acid the agitation should not exceed 60 r.p.m.

8. Explosive limit: 1,500 pounds Tetryl.

9. Floors must be oiled at least once daily with kerosene (on 12-8 shift).

10. Report all injuries, no matter how slight, to the foreman immediately.

A careless man is just an injury going some place.

11. Three operators must be in the building at all times during operations.

12. Rubber gloves, sleeves, apron and goggles must be worn while washing the nitrator.

13. Leather gloves and goggles must be worn when greasing and cleaning the nitrator plug cock and when slurrying off the acid nutsch.

14. Nitrator operators must not leave the nitrators until after the temperature reaches 110°F. during the cooling period.

15. Nitrator cycle times are standard. Variations are never permissible.

16. All small aluminum and plastic equipment is prohibited in the building.

17. The interior of the vacuum tank must be inspected before filtering acid from acid nutsch and again after the acid has been sucked from the nutsch before dropping water onto the nutsch.

18. Carefully check agitation blades and baffles for any looseness with a wooden paddle every time the nitrator is washed out.

19. The emergency drowning tub must be filled to a depth of three (3) feet with water and a slight air agitation must be maintained at all times.

20. Inspect DMAS feed valves to be sure they are closed before pumping up DMAS. Make sure that the valve to the other scale tank is closed.

21. Nitrator plug cock must be carefully checked for leaks after mixed acid is dropped.

22. Emergency Klaxons should be used only in case of an emergency and during supervised weekly tests.

One weak link will spoil the safety chain.

23. Inspect steam accumulator each shift for proper water level and proper functioning of steam trap.

24. 72 inches is the maximum depth to which both the Mixed Acid and DMAS tanks may be filled.

25. Know use and location of gas masks.

26. Know use and location of fire extinguishers.

27. Avoid breathing all fumes; if fumes are breathed, report this fact to the Tetryl Leader at once.

28. Floor sweepings and all waste materials must be kept in the proper receptacles. All such containers should be emptied daily and the house maintained in good order and cleanliness.

29. Clean up all powder spills immediately.

SPECIAL SAFETY RULES

TETRYL REFINERY

1. Not more than five persons shall be permitted within the house at one time during operating hours.

2. Explosive limit: 1,500 pounds Tetryl.

3. Do not store any acetone in the building except the material in process.

4. Transfer all acetone from the storage drums to the refinery in the special "inflammable liquid" can provided for this purpose.

5. Repair all acetone leaks at once.

6. Prolonged exposure to acetone fumes must be avoided.

7. Do not ride on the elevator.

8. Keep floors free of loose powder at all times.

9. Floors must be oiled at least once daily with kerosene. (On 12-8 shift).

10. Report all injuries, no matter how slight, to the foreman immediately.

11. Avoid roughness in loading and unloading nitrogen cylinders.

12. Acetone cans must be carefully grounded before adding contents to measuring tank.

13. Before an elevator is operated make sure the wooden guards are across each end and that the safety latch is closed whenever the elevator stops at a landing.

Safety doesn't even cost you the price of a smoke.

14. Place buggies on the elevator so that the handle side will face toward the operator when he removes the buggy from the elevator.

15. Goggles must always be worn when dropping the charge from the still to the nutsch.

16. Make certain that the flanges around the top of the dissolver are kept absolutely clean and free of tetryl. (Pressure here could detonate the tetryl).

17. The dissolver top must be swept clean of any tetryl spills.

TETRYL DRY HOUSE

1. Powder uniforms, powder shoes and cloth gloves must be worn in this building. The gloves should be replaced with clean ones from laundry each shift. Goggles and respirators must be worn when discharging dryers.

2. Employes must wash before eating and must take a bath before leaving the plant; clothes must be sent to the Plant laundry daily.

3. The temperature of the dry house is dependent upon an inlet air temperature of 150—155°F. This must not be exceeded.

4. The entire floor must be washed daily; entire building interior must be washed thoroughly and inspected by the Shift Supervisor before any repair work is done. (Blower house covered under separate ruling).

5. No one is allowed inside the dry house while a charge is in the house and the blowers are operating.

6. Use only wooden shovels and wooden rakes for charging and discharging dryers.

7. Explosive limit: 3,000 pounds (dry) Tetryl.

8. Always close main damper on air duct from blower to dry house before starting or stopping motor.

9. Not more than four persons are permitted within the house at one time except when the house is thoroughly cleaned.

10. During severe electrical storms all men shall leave the vicinity of this building.

11. Report all injuries, no matter how slight, to the foreman immediately.

12. Operators must grasp static bars before entering dry house building.

13. Powder buggies shall not be parked on walkway less than 5 feet apart.

14. When pushing buggies, they must be 50 feet apart. Push buggies with small wheels on the near side.

15. Care must be taken not to bruise hands between powder hoes and buggies. Always wear gloves.

Don't forget this: Falling is hard on the hide.

SPECIAL SAFETY RULES

TETRYL PACKING HOUSE

1. Powder uniforms, powder shoes, and leather or cloth gloves must be worn by the operators in this building. Goggles and respirators must be worn when screening dry tetryl and filling the boxes.

2. Employes must wash before eating, must take a bath before leaving the Plant; and clothes must be sent to the Plant laundry daily.

3. Clean up all spills immediately and keep house clean at all times, and mop entire house at end of each shift.

4. The only tools allowed in the building are one rubber mallet and one brass nail puller.

5. Explosive limit; 12,000 pounds dry tetryl.

6. Not more than a total of five (5) persons shall be permitted within the house at one time during operating hours.

7. During severe electrical storms all men shall leave this building.

8. All injuries, no matter how slight, must be reported to the foreman immediately.

9. Wet down dry rejects and sweepings before taking them to the lag house.

10. The nailing machine must be shut down and the switch locked out before anyone works at or near the nail hopper.

11. One operator must always be present in the packing house except in the case of an electrical storm.

12. Before an elevator is operated make sure the wooden guards are in place, and make sure that the safety latch is closed whenever the elevator stops at a landing.

13. As soon as sweeping compound is swept up pour kerosene on it and place in the reject box on trash platform.

14. The magazine car must be carefully inspected before it is allowed to enter the building.

15. Always push buggies; when pushing them, they must be at least 50 feet apart and they should be pushed with the big wheels forward.

16. The entire interior of the building must be washed, kerosened and inspected by the Shift Supervisor before any maintenance can be done. All powder must have been removed from the house.

PROCEDURE FOR TANK WORK

I. SCOPE

These rules apply to all tanks, tank cars, receivers, tubs, or similar vessels, whether open or closed; in which there are or may be poisonous, suffocating, intoxicating, or otherwise noxious vapors, or a deficiency of oxygen, and to all rooms or other partially closed spaces similarly charged.

II. RESPONSIBILITY AND TRAINING

1. A man not below the rank of foreman in each Area shall be designated to supervise all tank work and shall be given full responsibility.

2. The supervisor shall be responsible for the selection and training of his men for tank work.

3. The men shall be trained:
   a. To perform artificial respiration by the prone pressure method.

   b. In the characteristics and dangers of fumes, gases, poisons, etc., likely to be encountered.

   c. In the use of available fire fighting apparatus.

   d. In listing, adjusting, and using air helmets or gas masks, safety belts, and combustible gas indicators.

III. PREPARATION FOR ENTRANCE

1. Hang on tank manholes, "Danger—Do Not Enter" signs.

2. Drain tank.

3. Disconnect and blank flange all lines.

4. With long-handled implements and hose, work down and remove all material. Wash, steam, or neutralize, depending on previous contents. Use a combustible gas indicator if the tank has previously contained inflammable vapors. Rewash, if necessary until a satisfactory reading is obtained.

5. Vent (at both top and bottom if possible) by removing manhole and handhole plates.

IV. ENTRANCE

1. Before granting authority to enter, the supervisor should personally inspect the tank and determine the use of the following equipment:

   a. Safety belt and line.

   b. Air helmet, gas mask, or air remover.

   c. Rubber boots, goggles, gloves, or other protective clothing.

   d. An extra helmet or mask and extra safety belt and line must be on hand for emergency use.

2. No more than two men shall ever be in a tank at one time. One man must always be on hand outside the tank for each man in the tank.

3. The men outside the tank shall tend the safety lines and operate blower if an air mask is used. Tenders must watch their men to the exclusion of all other duties.

4. Helmets or masks, if used, should be put on outside the tanks.

5. Tanks should be entered by means of ladders. These ladders should not be withdrawn while men are in the tank.

V. EQUIPMENT AND ITS CONDITION

1. All equipment should be examined by the supervisor before being put in use.

2. No canister except "all service" type should be used where carbon monoxide gas is present.

3. No gas mask should be used where noxious gas concentrations possible exceed 2% or where an oxygen deficiency may exist. For this purpose, an air helmet or oxygen helmet should be used.

4. All portable electrical equipment and extension lights must be grounded. Approved safety lanterns may be used.

5. Where inflammable vapors are likely to be present, no steel tools may be used.

6. Riveting, electric or gas welding, or cutting, and ordinary soldering should not be performed on the interior or exterior or near the manholes of tanks which may contain traces of inflammable substances or vapors.

7. Men who have been exposed to gases or fumes, or appear weak, nauseated, coughing, intoxicated, or with nosebleeds, or cramps, or who exhibit other unusual symptoms, should be in no case permitted to leave the Plant alone without the doctor's approval.

POISONING WITH NITROUS FUMES

1. Nitrous fumes are dangerous, and the intensity of color of the fumes is no index of the degree of danger.

2. In case a fume leak is observed:
   a. Leave the Area of the leak immediately.
   b. Notify all others who might be affected at once.
   c. Report the condition to your supervisor.
   d. Do not re-enter the Area without taking all necessary precautions as approved by your supervisor.

3. Extreme care must be taken in the following operations to avoid contact with fumes:
   a. Measuring tanks.
   b. Loading nitric and mixed acid cars.
   c. Wherever, by means of smell or sight, fumes are apparent.

4. Any man who has inhaled sufficient nitrous fumes to cause even slight irritation should be taken immediately into the fresh air. If possible, the man should be carried and not allowed to walk. He should lie down and as soon as possible be carried on a stretcher to the plant hospital. If respiration seems to be affected, manual methods of artificial respiration should **not** be used. He should be allowed to inhale a mixture of air with oxygen, **not oxygen and CO^2.**

NOTE: The most serious factor in poisoning with nitrous fumes is the frequent absence of any feeling of sickness for several hours following initial inhalation of the fumes by the workers exposed. With-

out warning after this period, severe lung conditions, especially pulmonary edema and pneumonia, may arise, and the probability of these occurring and leading to death is the greater the more active the worker is between the time of his initial inhalation of the fumes and the time at which the lung conditions appear. No adequate method of treatment has yet been devised which will prevent the occurrence of these lung conditions after inhalation of nitrous fumes. Only complete rest, commenced immediately after inhalation will reduce the probability of this serious condition developing, and when it does develop, the mortality rate is apt to be high.

DON'T LEAVE
SAFETY
ON THE WORKS

•

DRIVE CAREFULLY
ON THE
HIGHWAYS

•

INSPECT YOUR
HOME
REMOVE FIRE
AND SAFETY
HAZARDS

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